I: Beals E-5 (1940-1941) 1946 NU34 Tarasco NU34
Sierra Tarascans



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412
313

FIGURE 1.—Woodworking implements. *a*, Typical ax head, weighing 6 to 8 pounds. *b*, Same as *a*, with handle; total length about 5½ feet. *c*, Short-handled adz (angüra). *d*, Saw used for cutting planks (k'orári arákwtarakua), about 6 feet long; the lower handle usually is of metal and clamps over the end of the saw, engaging the saw teeth to hold it in place. *e*, Long-handled adz. *f*, Method of using long-handled adz to dress beams or planks. *g*, Logging saw, "sawbuck," used to cut felled timber into desired lengths.

[p. 16]

313 Cherán prefers shakes 5 *cuartas* in length,
304 called "thick shakes" (tasámani tiápiti).
438 Shakes of 4 *cuartas* (1 *vara*) are sold primarily in Uruapan and are spoken of as *de comercio*, or "small shakes" (tasámani sapírati). Shakes 6 *cuartas* long, preferred by some Tarascan towns, are called "long shakes" (tasámani iórati). In Angáhuan, shakes 5 *cuartas* long are sold in Zamora and are sometimes called Zamorana.

313 Shake makers usually work from 8 a. m. to 6 p. m. A week's work routine is as follows: On Tuesday suitable trees are sought and felled. Wednesday is devoted to cutting trees in sections. Thursday and Friday the timber is split into shakes. One day is spent drying the shakes in the sun, and, if the maker is a professional, the finished product is taken to Uruapan or Zamora on Saturday and Sunday for sale. On this schedule one person might make two bundles of 400 shakes (two irépitas) in a week.

313 Railroad ties are usually made under contract
439 arrangements. The workers leave town on
397 Tuesday, usually arriving in time to cut a week's supply of logs for splitting and shaping. Wednesday, Thursday, and Friday are spent in splitting and shaping the ties with the ax. Saturday the ties are checked by the contractor, and the men are paid in time to return home that night.

313 A minor industry is cutting out blocks of
322 madroña and jaboncillo wood. These are sold
438 in Paracho, where they are made into doors, spoons, wooden bowls, and the various small wooden objects for which Paracho is famous. A few people in Cherán also make broom handles.

314 A considerable amount of charcoal is produced on the more distant lands of Cherán. Several men in town make their living entirely from charcoal burning. Oak is used almost exclusively for charcoal. Charcoal burners usually spend from Monday until Friday in the woods, and return home over the week end. Charcoal is usually sold in the woods to dealers, the unit of sale being a stack 8 by 7 inches by 6 feet.

In a number of Tarascan towns turpentine production is an important industry. This has been true of Cherán in the past, but, for reasons not discoverable, output at present is

301 Miscellaneous cheap products of the markets may be worn, but the proper type every woman desires is a large hollow crescentic ornament with wires from each end passing through the perforation in the ear. These are of gold or silver, gold being preferred. A gold pair costs [435] about $35.00.

## WOODWORKING TECHNIQUES

335 Carpentry, including house building, is the only wood manufacturing process in Cherán 322 except that of a single man who turns out chocolate beaters and that of a family who make broom handles. Aside from house building, carpenters mainly make doors for houses and kitchens, gates in fences, and trap doors. While several carpenters can do other kinds of woodwork, they rarely make furniture, as Cherán carpenters do not feel they can compete with those of nearby Paracho.

511 The differences in the economic well-being of towns situated only a few miles apart are 465 sharply underscored by this situation. Paracho is a "poor" village with inadequate lands. A considerable percentage of the population gain their livelihood as hired laborers, traders, carpenters, and weavers. Furniture makers in Paracho receive ordinarily 50 centavos for a chair, which takes perhaps a day to make. Carpenters from Cherán, most of whom are also landowners, feel this is a quite inadequate return. Data from Cherán indicate carpenters receive $1.50 or more a day for their labor. It may be that the traditional specialization of labor may have some influence upon the Cherán carpenter's unwillingness to make furniture, but differences in economic standards undoubtedly play a part.

335 Carpenters have a shop in their yard, usually consisting of a shed with one or two sides closed. Under this is a work bench of heavy planks. The tools are a saw, mallet, chisels, adz, hammer, and plane. Usually the metal parts only are purchased, and handles and plane boxes are made by the carpenter.

As the majority of Cherán houses are of wood, another important activity of carpenters is house building. Only the simplest house construction would be undertaken without the aid of a carpenter, and even the roofing of a stone or adobe structure likewise calls for a

[text continues on p. 436]

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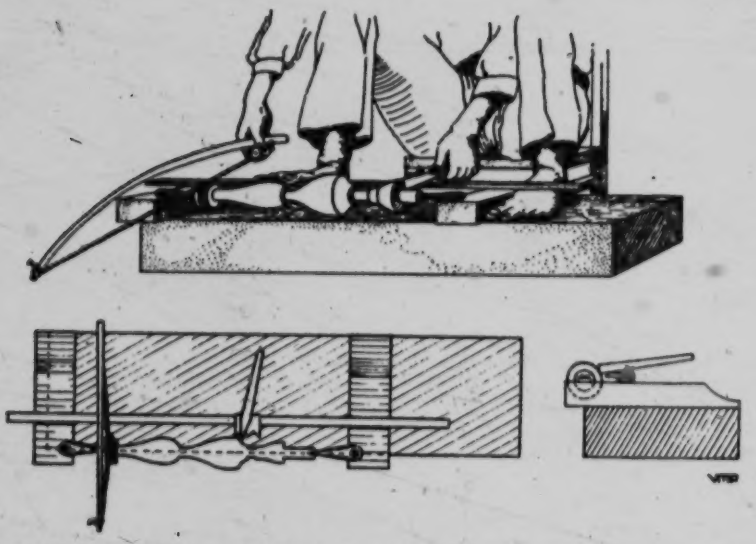

FIGURE 9.—Lathe driven by a bow. A candlestick, about 12 inches long, is in process of manufacture. The two bottom views show the position of the cutting tool.

[p. 43a]

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
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[p. 436]

335 carpenter. Inasmuch as a detailed description of houses, house use, and house furnishings has already been published, no discussion is included here (Beals, Carrasco, and McCorkle, 1944).

322 402 [824] As mentioned previously, one man in Cherán manufactures chocolate beaters of simple type. They are made of madroño wood and are turned on a crude lathe (fig. 9). Power is provided by a bow with the string wrapped about the shaft of the lathe. The left hand is used to work the bow. The lathe rests on the ground, and both the bare feet and the right hand are used to manipulate the tools. The tools and technique are characteristic of Paracho, where a wide variety of turned wood products is made, including bowls, vases, candlesticks, chocolate beaters, salt and pepper shakers, and chessmen.

322 438 Broom handles are made by one family, as already mentioned. Pine logs are split into long staves, which are whittled into a roughly round shape with a knife. The entire product

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
Sierra Tarascans

[p.43c]

322 438 is sold in Pátzcuaro, where there is a broom factory.

## MISCELLANEOUS PROCESSES

237 *Wax bleaching and candlemaking.*—Beeswax is often bleached by exposure to the sun. Melted wax is poured into bowls so that it forms a thin shell over the inside. These shells are removed and exposed to the sun for several days until the wax becomes white. Although the wax loses weight by this process, it sells for no more than unbleached wax. The extra [461] effort thus apparently results in an economic loss, making the motivations for the work somewhat obscure. Although men do all other work [462] connected with beekeeping, women often bleach the wax.

394 Candles are made by men. Two candlemakers are reputed to live in Cherán. The only one who could be located was always so drunk at the time of interviewing that little reliability can be attached to the data secured

*Wood turning:*

322 433 434

*Equipment:*

Lathes
Saws
Chisels

*Product:*

Chocolate beaters

*Cost of materials:*

No data; the small quantity of madroña wood used is probably a minor factor.

*Labor:*

[435] About 25 to 30 beaters are made in a day's work. Sale price at 50 centavos per dozen ..... $1–$1.25

*Comment:* Considering the costs of materials and the time involved in selling the product, returns for labor probably are under $1 a day. Only one man in Cherán follows this trade.

## MINERAL PROCESSING AND USE

*Brickmaking and tilemaking:*

339 433 434

*Labor* (per 1,000 tile or brick):

| | Days |
|---|---|
| Getting and mixing clay | 2 |
| Cutting and hauling wood | 1 |
| Shaping | 5 |
| Loading kiln | 1 |
| Total | 9 |

*Other costs (in kind):*

Rent of building and right to dig clay on public lands (paid to *municipio*), 10 percent of product value:

| | |
|---|---|
| Tile, per 1,000 | $3.00 |
| Brick, per 1,000 | 3.20 |

*Sales prices:*

[435]

| | |
|---|---|
| Tile, per 1,000 | $30 |
| Brick, per 1,000 | 32 |
| Gross profit, tile, per 1,000 | 27 |
| Daily profit per worker | 3 |

*Comment:* While brick bring a slightly higher price, there is a greater loss in firing. Consequently, profits are about the same as for tile. The demand for brick or tile is not sufficient to employ two men full time. The wage return is hence misleading, indicating what might be possible if demand provided steady labor. [465] The fact that both tilemakers took jobs on highway construction crews whenever possible at $1 a day suggests that income over a long period of time is much less than is indicated. On the other hand, the tilemakers probably average a higher annual income than do unskilled landless farm laborers in Cherán.

*Masonry:*

333 433 434

*Equipment:*

Trowel ("*cuchara*")
Short shovel
½-pound iron mallet ("*marro*," maso)
2-pound sledge with pointed ends ("*picadera*")

281 434 *Comment:* The average daily return is an estimate, based on the assumption the tanner is busy all the time. The only full-time tanner buys hides, tans them on his own account, and sells them outside the village when he is not occupied with commissions. Consequently, his income is probably fairly steady.

922 434 *Lacquer:*

Weekly income about $5

*Comment:* Only one woman lacquer worker is found in Cherán. Her entire output is sold locally. The figure given is her estimate of her weekly income. Some of the lacquer materials are fairly expensive and the wooden trays used as a base must be purchased. Probably net income is much less than $5 weekly. The main lacquer industry is in Uruapan and is mostly in the hands of Mestizos.

256 433 434 *Bakers (commercial):*

*Cost of materials (per week):*

| | |
|---|---|
| Flour, 1 *arroba* (25 pounds) | $3.50–$3.62 |
| Lard, 1 kilo | 1.50 |
| Sugar, 3 kilos | 1.08 |
| Total | $6.08–$6.20 |

*Labor:*

| | |
|---|---|
| No precise data; bakings per week, usually | 3 |

*Sales:*

| | |
|---|---|
| Gross returns per week, estimated | $10.00–$12.00 |

*Profits:*

| | |
|---|---|
| (Estimated after deducting any rental costs for use of oven) | $3.80–$5.92 |

*Comment:* Sustained sales at the reported levels would produce slightly better than average wages. Despite the lack of definite data on hours of labor, a baker certainly works fewer hours and less strenuously than a laborer. Much time is probably consumed in selling; this may be done by a wife in the case of professional male bakers. Selling time is not included in the estimates. It should be remembered that a number of women bake occasionally; some bake regularly for the Sunday market in Paracho.

*Bakers (home):*

Aside from the professional baker of *pan dulce* recently established in the village and from whom no satisfactory information could be secured, there are a number of women who bake bread. Salt rising bread [435] (*pan de sal*) is sold at two for 5 and one for 5 centavos, depending on size. If *pan dulce* is made, it sells at 1 centavo or at three for 5 centavos, depending on size. In most cases the baker owns her oven, but in some cases an oven is rented. The rental is usually one [427] bread for each "board" (on which the bread is placed to rise).

2:Carrasco E-4, 5 (1945)1952
[P.199] NU34 Tarasco NU34
Pátzcuaro

178 463 and in some towns hat making has surrendered to factory competition.[60]

Paracho, on the other hand, shows the ●322 opposite picture. Here the manufacture of wooden objects (bowls, vases, candlesticks, 178 chocolate beaters, chessmen, toys, etc.) has [534] greatly increased in importance. The town [439] also manufactures guitars for Mexico City and Guadalajara buyers.[61] Santa Fe pot- [323] tery has recently been selling to Mexico City and even United States curio shops.[62]

178 463 The declining crafts are among those producing basic necessities, while the growing ones are luxury crafts depending in part on the tourist market.

Both the disappearance and growth of handicrafts disrupt the economic independence of the village, for they produce an increased dependence on the national market either in selling the developed manufactures or buying what formerly was produced locally. As in the land situation, however, the older order is preserved to a significant extent. Handicrafts for the local market are still the main economic activity of many villages: pottery, shawls, belts, agave fiber bags and sacks, hats, mats, baskets, metates, furniture still provide the livelihood of many Tarascans.[63]

423 578 No matter how important handicrafts may be for the economy of a given village, land tenure is the factor which has produced the conflicts during the revolutionary period. This holds true even for vil- [438] lages predominantly devoted to handicrafts, like Tzintzuntzan (pottery) and Jarácuaro (hat making).

The conflicts which arose within the villages during the Revolution will presently be discussed.

## The Mexican Revolution and the Tarascans

175 668 423 After the peaceful Porfirio Díaz period (1877-1911), characterized by the economic development of the country, a period of unrest began in 1910. Under the term 'Mexican Revolution' are usually understood both the armed conflict from approximately 1910 to 1920 and the various governments and their policies from the beginning of the struggle down to the present time. The Mexican Revolution is thus a very complex social transformation which includes all aspects of Mexican life. I shall discuss only those aspects of the agrarian revolution and reforms which concern Tarascan developments. The lit-

60. *Ibid.*, 66.
61. *Ibid.*, 67, 68.
62. *Ibid.*, 63.
63. *Ibid.*, 56-71.

4: West K-5 (1946) 1948 NU34 Tarasco NU34
[P. 679]

palm are tied on one cord, half-hitched to the second one, and then tied back to the first; the loose end of the strip is permitted to hang over the second cord, thus forming a drainage surface similar to thatch (pl. 12). The process is repeated, adding a new row of tied strips to the previous one until the garment (4 ft. long and 3 ft. wide) is completed. Arantepacua *capotes* are marketed as far north as Guanajuato. No mention is made of these raincapes in the colonial sources, nor is there a Tarascan word for the garment. It is not improbable that the *capote* is an introduced trait.

**Broommaking.**—This is another minor industry now practiced by a few men in Arantepacua. Pimu palm leaves are symmetrically arranged around the end of a finished pine stick and then tied with agave fiber or a braided strip of palm. The result is a common broom found in all parts of central Mexico.

## WOODCRAFT

According to the early Spanish chroniclers, the Tarascans were clever craftsmen in wood, and under the instruction of Spanish masters the natives became among the best carpenters in New Spain (La Rea, 1945, p. 20; Escobar, 1924, p. 147). By 1580 Indian carpenters in at least four towns—Pátzcuaro, Necotlán (Undameo), Tiripitío, and Tingüindín—were turning out European-styled tables, chairs, and writing desks, which found ready sale among Spanish colonists in all parts of Michoacán.[180a] At that time lathework was established in Pátzcuaro, and probably before 1540 Tarascans had begun to carve saddle frames for Spanish horsemen (Molotinía, 1903, p. 183). Like other Tarascan industries, woodwork was probably a rudimentary pre-Conquest craft greatly modified and improved by European techniques. However, the present commercial types of Tarascan woodwork—cabinet work, lathe work, and adz work—all appear to have been developed in the 16th century.

Specialized woodwork (apart from lumbering and shake making) was formerly more widespread among Tarascans than at present. At the end of the 18th century wood objects were manufactured in 21 pueblos (AGN Historia, vol. 73), today in only 13 towns. In but eight of the latter is the

[180a] Rel. de Pátzcuaro, 1581 (Martínez, 1898, p. 47); Mus. Nac., leg. 103: Rel. de Chocandirán, Rel. de Necotlán; Rel. de Tiripitío, ms. (in Garcia Library, Univ. of Texas).

322 industry more than 150 years old; in only five of the present towns do more than 25 percent of the working population engage in woodwork.

Adz work.—This is the simplest of the wood techniques now practiced by Tarascans (and by other Indian groups, as well as by mestizos in many parts of Mexico). Before the Conquest the Indians shaped boats from a single log and carved delicate figures on throwing sticks and tom-toms, possibly using obsidian and copper cutting tools. With the introduction of the [177] European steel adz and gouge early in the 16th century, native wood carving was greatly facilitated. One of the earliest European objects which the Tarascans carved with the adz was the saddle frame (*juste*), an industry which disappeared 100 years ago. Today wooden spoons 322 and bowls (*bateas*) of softwoods are the principal 438 adz and gouge products, Pamatácuaro and its offspring settlements Sirío and San Benito being the chief producers.[181] These objects are also made in the Tarascan villages of Turícuaro, Cumachuén, Pichátaro, Zirosto (formerly important) and Sevina (where the industry was introduced a few years ago), and in the mestizo towns of Pátzcuaro, Tócuaro, Zirahuén, Uruapan, Quiroga. Spoons and bowls are made from softwoods: *jaboncillo* (šápu), *palo blanco* (urápit-úku), and *aile* (pámu). Occasionally *bateas* are made of pine. Tools include the common adz and [112] variously shaped gouges, which are driven with a wooden mallet (pl. 13). The products of Pamatácuaro and surrounding settlements are marketed in all parts of Michoacán and sometimes are taken as far as Guadalajara and Mexico City.

Lathe work.—This represents one of the most characteristic forms of modern Tarascan woodcraft, Paracho being the center of the *torneros*. Formerly the simple bow lathe was employed to make bowls, vases, candlesticks, chocolate beaters (*molinillos*), chessmen, toys (tops, yoyos), darning eggs, etc. (See Beals, 1946, p. 43, for illustration of bow lathe.) Since 1942, however, when a power line was constructed near the town, most of the bows have been replaced by electrically powered lathes. About six *torneros* in Paracho and five in neighboring Ahuíran still use the bow. Formerly turned objects, chiefly rosaries, choco-

[181] It is doubtful that wooden bateas were carved before the Spanish Conquest. Gourds of *Crescentia alata* probably functioned for the modern bateas. The "bateas" employed in early Spanish gold pinecring in the Sierra Caliente were likely fashioned from *Crescentia* gourds.

322 late beaters, and *malacates*, were made in Charapan
[438] and Cocucho, but this activity has now disappeared. Most of the turned objects are shaped from madroño wood (panáŋkʌ). Carving is done by pressing variously shaped steel chisels and gouges against the whirling block of wood.
[531] In Paracho, designs are painted and burned into objects, and the surface lacquered or varnished.
[177] The wheel lathe, an early Spanish introduction, is used by most cabinetmakers in the area for turning wood.

**Cabinet work.**—As mentioned earlier, cabinet work was rapidly adopted by Tarascan craftsmen in the early colonial period. In the 17th and 18th centuries inventories of miners' and merchants' household goods in west-central and northern Mexico rarely fail to mention chairs, tables, boxes "de Mechoacán." The majority of present Tarascan towns has at least one cabinetmaker who partially satisfies local demand for furniture. In
[438] Paracho, Corupo, and Cuanajo—the Tarascan furniture centers—carpenters make chairs, tables, bed frames. Cuanajo is famed for its wooden chests, which are marketed in all parts of Michoacán. Most furniture is made from pine wood with simple tools (saw, mallet, plane, chisel, gouge). As mentioned above, chair and table legs are turned on the wheel lathe (fig. 6). The more common jointing techniques used include mor-

[P. 68-b]

322 ticing and tenoning, housing, and dovetailing. Some pieces are joined with wooden pegs; metallic nails and screws are never employed.

322 534 [438] **Musical instruments.**—The most sophisticated of Tarascan woodwork is the manufacture of stringed instruments in Paracho. This pueblo has been the guitar town of Mexico since colonial times. In 1940 Paracho claimed 49 guitar makers and three individuals who made violins (including base viols). The art has spread to neighboring Ahuiran, where three men made violins in 1946. Local woods—*tirímu*, *aile*, and *palo blanco*—are used for the top and base of the guitars; for sides and handles and inlaid designs walnut and cedar are imported from Mexico. Some *guitarreros* utilize local pine and fir for the tops of violins and base viols. The wood is cut with a small saw and planed to desired thinness. The top and base are cut from a pattern; the side bands are soaked and bent into place, being glued to the top and bottom pieces and held in place with braces. Strings and metal parts are assembled, and the instrument is varnished and waxed, ready for the ultimate consumer. Most *guitarreros* work on a [439] contract basis for Mexico City or Guadalajara buyers, and many Tarascans have moved their trade to the larger towns, mainly Mexico City, where their products bring higher prices.

The age of the Paracho guitar work is not known.
[TEXT CONTINUES TOP OF P. 69a--ANALYST]

4: West K-5 (1946) 1948 NU34 Tarasco NU34
[P. 68 c]

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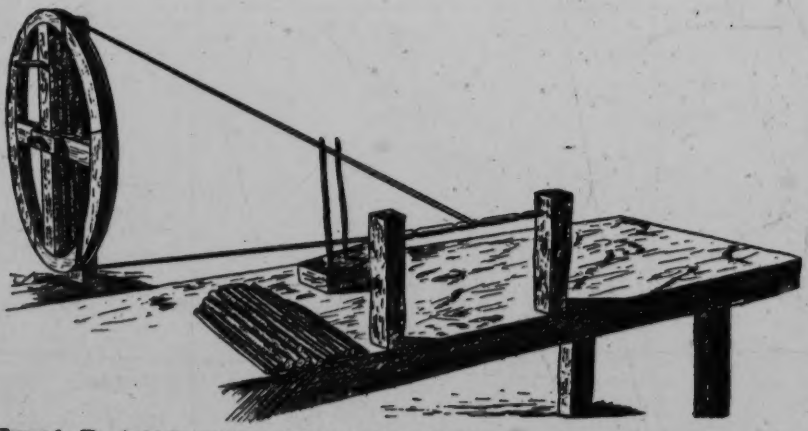

FIGURE 6.—The wheel lathe, used by most Tarascan cabinetmakers for turning wood. The wheel ranges from 3½ to 4 feet in diameter and is usually turned by a small boy.

4: Wes K-5 (1946) 1948 NU34 Tarasco NU34
[P. 69-a]

322 It is first mentioned as an established industry in the report of 1789 (AGN Historia, vol. 73, f. 344), indicating that it had been introduced for some time.

## LACQUER WORK

386 Modern lacquerwork in Michoacán is closely
322 associated with wood carved with the adz and lathe. Before the Spanish Conquest various gourds (*Lagenaria*, *Cucurbita*, and *Crescentia*) were lacquered with a varnish made from the insect *axin* (*Coccus axin*) and *chía* (*Salvia* sp.) This industry probably centered in the Balsas and Tepalcatepec Basins (Brand, 1944, p. 60) and was extended into the towns near the southern edge of the Sierra, e. g., Peribán and Uruapan. After the introduction of Spanish adz work during the colonial period, lacquer was applied to wooden *bateas* in Peribán, Zirosto, Zacán, Uruapan, and Pátzcuaro. *Bateas* were painted, but not lacquered, in Cucupao (Quiroga) and Santa Fé de la Laguna. Today few Tarascans practice the art, the famous *bateas* of Uruapan being lacquered by mestizos. Some of the turned vases and bowls of Paracho are finished with tung oil and synthetic lacquer purchased in mestizo markets.

## LEATHERCRAFT

282 Probably one of the first native Tarascan crafts stimulated and expanded by the early Spaniards was leatherwork. With the introduction of cattle, Tarascan tanners were able to multiply leather production, which formerly had been based on deerskin, to meet the heavy Spanish demand for saddles, halters, shoes (the famous "*zapatos de baqueta de mechoacán*").[182] Tanning was done with local oak bark, as it is today (AGN Tierras, vol. 83, exped. 13). During the colonial period leather-
282 crafts were centered in the northern Tarascan
438 towns near the pastures and hide supply, and in a few pueblos of the Sierra. The latter included Cherán, Cheranátzicurin, Ocumicho, and Nahuatzen, which was one of the largest tanning centers

[182] Fray Toribio de Motolinía's statement of 1540 on the Tarascan leather industry is revealing: "*Han deprendido a curtir curambras . . . son buenos zapateros, que hacen zapatos y cerollias* [slippers], *borzeguíes* [high shoes], *yuanjíes, chapinas* [wooden shoes with leather straps] *de mugeres; . . . este oficio comenzó en Michoacán, porque allí se curten los buenos cueros de venados. Hacen todo lo que es menester para una silla ginete hasta y fuste, cerco y sobrecerco . . .*" (Motolinía, 1903, p. 183). According to the Relación de Michoacán (p. 16) "*cotaras de cuero*," or leather sandals, were made for the caltzontzin in pre-Conquest times.

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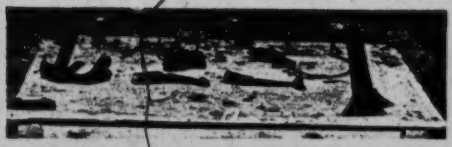
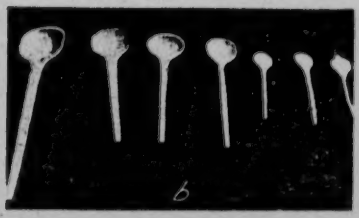
[415]





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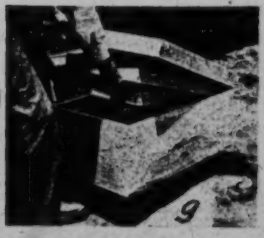

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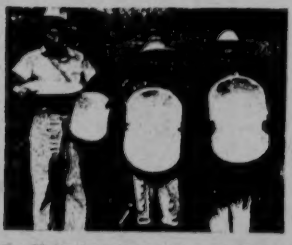

PLATE 13.—Woodwork. a, Gouging tools, Pomaderaro. b, Wooden spoons and ladles, Pomaderaro. c, Modern electrically powered lathe shop, Paracho. d, Turned objects made at Paracho. e, Cabinetmaker's shop in house lot, Cuanajo. f, Making mortising with the bow lathe, Paracho. g, Nest of wooden boxes, Cuanajo. h, Small (3 feet high) rocking chair commonly made in Cuanajo. i, Rakes made at Ihuatzio.

[End-plate 13]